

# HP StorageWorks

## Linux connectivity 3.0G for the EVA3000/EVA5000 Enterprise Virtual Array release notes

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# About this document

This document includes the following topics:

- [Release notes information](#)
- [Intended audience](#)

## Release notes information

These release notes include the following topics:

- [New features](#)
- [EVA storage system](#)
- [EVA compatability](#)
- [Storage System Scripting Utility for EVA](#)
- [Avoiding problem situations](#)
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## Intended audience

This document is intended to assist customers who purchased the HP StorageWorks Enterprise Virtual Array (EVA) to run on the Linux® operating system.

This document is also intended for use by HP customer service personnel responsible for installing and maintaining devices connected to the EVA.

## New features

The following are major enhancements included in this release:

- Support is provided for Virtual Controller Software (VCS) 3.025.
- Support is provided for updated kernels (see [Table 1](#)).

## EVA storage system

### EVA documentation

A complete library of EVA and related documentation is available at the following web sites.

<http://www.hp.com/go/eva5000>

<http://www.hp.com/go/eva3000>

### Product support information

The latest product support release information and downloads for storage products are available at the following web site.

<http://h18006.www1.hp.com/storage/index.html>.

## Supported configurations

Supported configurations are described in the *Enterprise Virtual Array QuickSpecs*, available at the following web sites:

<http://h18006.www1.hp.com/products/storageworks/eva3000/specifications.html>

<http://h18006.www1.hp.com/products/storageworks/eva5000/specifications.html>

The *HP StorageWorks SAN design reference guide* is a detailed guide for SAN configurations and is available at the following web site.

<http://h18004.www1.hp.com/products/storageworks/san/documentation.html>

## EVA compatability

Table 1 lists the operating system's specifications.



### NOTE:

Table 1 contains current minimum-level operating system specifications at the time of the EVA 3.025 release. Some component versions may change due to revision. For the latest information, go to the following web site: <http://h18006.www1.hp.com/storage/index.html>.

**Table 1 Operating systems specifications**

Platform	OS version	Kernel	FCA (HBA)	Adapter BIOS version (minimum)	Adapter driver version (minimum)
X86 Red Hat EL [ES/AS]	2.1	2.4.9-e38 2.4.9-e38smp 2.4.9-e38 enterprise 2.4.9-e.40 2.4.9-e.40smp 2.4.9-e.40enterprise 2.4.9-e.41 2.4.9-e.41smp 2.4.9-e.41enterprise 2.4.9-e.43smp 2.4.9-e.43enterprise 2.4.9-e.49smp 2.4.9-e.49enterprise 2.4.9-e.57smp 2.4.9-e.57enterprise	FCA2214 281541-B21  FCA2214DC 321835-B21  BL20P FC Mezzanine card BL40P FC Mezzanine card	1.34	7.00.03

Platform	OS version	Kernel	FCA (HBA)	Adapter BIOS version (minimum)	Adapter driver version (minimum)
X86 Red Hat EL [ES/AS/WS]	3	2.4.21-9.EL 2.4.21-9.ELsmp 2.4.21-9.0.1.EL 2.4.21-9.0.1.ELsmp 2.4.21-15.EL 2.4.21-15.ELsmp 2.4.21-15.0.2.EL 2.4.21-15.0.2.ELsmp 2.4.21-20.ELsmp 2.4.21-27.ELsmp 2.4.21-27.0.1.ELsmp	FCA2214 281541-B21  FCA2214DC 321835-B21	1.34	7.00.03
X86 SUSE Linux Enterprise Server and Standard Server	8	2.4.21-128-itanium2-smp 2.4.21-128-itanium2 2.4.21-215-itanium2-smp 2.4.21-215-itanium2 2.4.21-231uni 2.4.21-231smp 2.4.21-238uni 2.4.21-238smp 2.4.21-241uni 2.4.21-241smp 2.4.21-251uni 2.4.21-251smp 2.4.21-266uni 2.4.21-266smp	FCA2214 281541-B21  FCA2214DC 321835-B21	1.34	7.00.03
X86 SUSE Linux Enterprise Server	7	2.4.7-4GB 2.4.7-64GB-smp 2.14.18-4GB 2.14.18-64GB-smp	FCA2214 281541-B21  FCA2214DC 321835-B21	1.34	6.04.00
IA64 Red Hat EL [ES/AS]	2.1	2.4.18-e.41 2.4.18-3.4-smp 2.4.18-e.43 2.4.18-e.43-smp	A6826A	1.34	.00.03
IA64 Red Hat EL [ES/AS/WS]	3	2.4.21-9.0.1.EL 2.4.21-9.0.1.EL-smp 2.4.21-15.EL 2.4.21-15.EL-smp 2.4.21-15.0.2.EL 2.4.21-15.0.2.ELsmp 2.4.21-20.ELsmp 2.4.21-27.ELsmp 2.4.21-27.0.1.ELsmp	A6826A	1.34	7.00.03

Platform	OS version	Kernel	FCA (HBA)	Adapter BIOS version (minimum)	Adapter driver version (minimum)
IA64 SUSE Linux Enterprise Server and Standard Server	8	2.4.21-112-itanium2 2.4.21-112-itanium2 -smp 2.4.21-198 2.4.21-215-itanium2, 2.4.21-215-itanium2 -smp 2.4.21-223-itanium2 2.4.21-223-itanium2-smp 2.4.21-231uni 2.4.21-231smp 2.4.21-238uni 2.4.21-238smp 2.4.21-241uni 2.4.21-241smp 2.4.21-251uni 2.4.21-251smp 2.4.21-266uni 2.4.21-266smp	A6826A	1.34	7.00.03
X86_64 Red Hat EL [ES/AS]	2.1	2.4.9-e40 2.4.9-e40smp 2.4.9-e40enterprise 2.4.9-e41 2.4.9-e41smp	FCA2214 281541-B21  FCA2214DC 321835-B21  EL BL20P FC Mezzanine card  BL40P FC Mezzanine card	1.34	7.00.03
X86_64 Red Hat EL [AS/ES/WS]	3	2.4.21-15.EL 2.4.21-15.ELsmp 2.4.21-15.0.2.EL 2.4.21-15.0.2.ELsmp 2.4.21-20.ELsmp 2.4.21-27.ELsmp 2.4.21-27.0.1.ELsmp	FCA2214 281541-B21  FCA2214DC 321835-B21	1.34	7.00.03
X86_64 SUSE Linux Enterprise and Standard server	8	2.4.21-215 2.3.1-215-smp 2.4.21-231uni 2.4.21-231smp 2.4.21-238uni 2.4.21-238smp 2.4.21-241uni 2.4.21-241smp 2.4.21-251uni 2.4.21-251smp 2.4.21-266uni 2.4.21-266smp	FCA2214 281541-B21  FCA2214DC 321835-B21	1.34	7.00.03

Table 2 details the Linux storage system attachments.

**Table 2 Platform/storage system attachment**

Platform or operating system	Platform HBA SAN attachment	Secure Path or QLogic Multi-path support	EVA SAN attachment	EMA/ESA 12000, EMA 16000, MA/RA8000, MA6000 storage system SAN attachment
X86 SUSE Linux Enterprise Server 7	FCA2214 FCA2214DC A6826A	Yes Yes Yes	Single-Path Multipath	F-Port using FABRIC topology Transparent or Multiple-path failover
SUSE Linux Enterprise and Standard Server 8				
Red Hat EL 3 [ES/AS/WS]				
Red Hat EL 2.1 [ES/AS]				
ia64 Red Hat EL 2.1 [ES/AS]				
SUSE Linux Enterprise and Standard Server 8				
Red Hat EL 3 [ES/AS/WS]				
X86_64 Red Hat EL 2.1 [ES/AS]				
Red Hat EL 3 [AS/ES/WS]				
SUSE Linux Enterprise and Standard server 8				

## Switch support

This release supports the Fibre Channel switches and firmware versions listed in the *HP StorageWorks SAN design reference guide* which can be downloaded from the following web site:

<http://h18000.www1.hp.com/products/storageworks/san/documentation.html>.



### NOTE:

HP recommends that you do not mix switch firmware versions in your SAN. It is considered a best practice to uniformly upgrade all switches in the SAN.

## Multiple path support

Linux with EVA storage requires the installation of StorageWorks Secure Path or Multipathing software to achieve high-availability multiple path capability.

For detailed multipathing information, refer to the *HP StorageWorks using the QLogic 7.00.03 driver for single-path or multi-path failover mode on Linux systems application note*.



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**NOTE:**

SLES8 with kernels 198 and 215 are not supported with Secure Path. Refer to your HP representative for specific Secure Path or multiple-path configuration information.

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## Operating constraints

You can find any operating constraints specific to the EVA hardware and Command View EVA in their respective release notes.

## Failover/failback

Failback preference settings for the HSV controllers are specific to the operating system. Refer to the HP StorageWorks Enterprise Virtual Array release notes for details.

## Storage System Scripting Utility for EVA

The Storage System Scripting Utility (SSSU) communicates directly with the Command View EVA. Refer to the *Command View EVA release notes* prior to using the SSSU.

## Avoiding problem situations

The following sections describe problems that may arise and their solutions.

### Known problems

You can find problems specific to the EVA hardware and Command View EVA in their respective release notes.

### QLogic failover preference

If you are using the built-in failover functionality of the QLogic driver 7.00.03 or later, set the failover preference to **Path A Failover** or **Path B Failover** in the Management Appliance host settings. Failure to do so can cause I/O errors when a failover occurs.



## Codeload usage

When a maximally configured system is running at maximum load, codeload functionality is not effective due to Secure Path timing constraints. The system may time-out before codeload is complete. Therefore, you should always perform VCS upgrades at an off-peak time.

## SSSU

### Changing comments on a disk enclosure

Use Command View EVA to change comments on a disk enclosure. If you try to change a disk enclosure comment using SSSU, the following error message appears:

```
Error: Invalid Operation
```

### Changing the name of a disk enclosure

Changing the name of a disk enclosure is not supported with the SSSU or Command View EVA. If you try to change a disk enclosure name using SSSU, the following error message appears:

```
Error: Invalid Operation
```

## Host considerations

This section contains information and important reminders about the host servers.

### Changing the Proliant BIOS

If you have a Proliant server with more than three HBAs installed, you must change a setting must in the BIOS. Otherwise, you may not be able to see all attached devices. To change the setting:

1. Press **F1** to access the ROM-Based Setup Utility (RBSU) during POST.  
This is normally after 5i Disk Array initialization.
2. Select **System Options > OS Selection>Linux**.
3. Select **Advanced Options > MPS Table Mode**.
4. Select **Auto Set Table**.
5. Press **ESC** twice, and then press **F10** to save the configuration.

### Host type for Linux

For smooth system operation, set the host type for Linux to Sun Solaris™ except in a LifeKeeper Cluster.

### Probe-luns and Secure Path

A kernel panic occurs when the `probe-luns` command is issued against FCA2214, FCA2214DC, and A6826A adapters while Secure Path is loaded. An example of this command is: `probe-luns -l -i qla2300`.

## Selective Storage Presentation (SSP) on SUSE SLES-7

You must reboot the server after using Selective Storage Presentation (SSP) to grant host access to a LUN.

### Documentation anomaly

The following information on page 19, Chapter 2, first paragraph, second sentence of the *HP StorageWorks Linux kit for Enterprise Virtual Array installation and configuration guide* is incorrect. Multiple-path configuration was inadvertently left out. It should read:

“This kit lets you connect host servers to the virtual disks of the Enterprise Virtual Array in a multiple-path or single-path configuration.”